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B. F. Skinner's Utopian Vision: Behind and Beyond *Walden Two*

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This paper addresses B. F. Skinner's utopian vision for enhancing social justice and human well-being in his 1948 novel, *Walden Two*. In the first part, we situate the book in its historical, intellectual, and social context of the utopian genre, address critiques of the book's premises and practices, and discuss the fate of intentional communities patterned on the book. The central point here is that Skinner's utopian vision was not any of Walden Two's practices, except one: the use of empirical methods to search for and discover practices that worked. In the second part, we describe practices in Skinner's book that advance social justice and human well-being under the themes of health, wealth, and wisdom, and then show how the subsequent literature in applied behavior analysis supports Skinner's prescience. Applied behavior analysis is a measure of the success of Skinner's utopian vision: to experiment.

Key words: *Walden Two*, B. F. Skinner, naturalism, utopian vision, social justice, human well-being, applied behavior analysis

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In the summer of 1945, B. F. Skinner wrote *The Sun Is But a Morning Star*, a utopian novel he published in 1948 as *Walden Two* (Skinner, 1948). An impetus for the book arose over the course of a dinner conversation in the spring of 1945 with a friend whose son-in-law was stationed in the South Pacific as World War II was coming to an end. Skinner mused about what young people would do when the war was over. "What a shame," he said, "that they would abandon their crusading spirit and come back only to fall into the old lockstep American life—getting a job, marrying, renting an apartment, making a down payment on a car, having a child or two" (Skinner, 1979, p. 292). When asked what they should do instead, he answered, "They should experiment; they should explore new ways of living, as people had done in the communities of the nineteenth century" (p. 292).

Skinner's interest in utopian thought was not new. As a youth, he read about the Shakers and other early 20th century communal societies. At Hamilton College in Clinton, New York, he noted the nearby site of the Oneida community. And, shortly before his dinner conversation, he had read Alice Tyler's (1944) *Freedom's Ferment*, which he described as a history of perfectionist movements. Although most of these movements had failed, they had done so, he thought, for irrelevant reasons. He was more hopeful: "young people today might have better luck. They could build a culture that would come closer to satisfying human needs than the American way of life" (Skinner, 1979, p. 292). Skinner was also motivated by dissatisfactions in his personal life: "I had seen my wife

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and her friends struggling to save themselves from domesticity, wincing as they printed 'housewife' in those blanks asking for occupation. Our older daughter had just finished first grade, and there is nothing like a first child's first year in school to turn one's thoughts to education'' (Skinner, 1976, p. v). His dinner companion insisted that he write down his ideas, but he had a pressing deadline for a paper (''The Operational Analysis of Psychological Terms,'' 1945) and put the matter aside. As soon as he finished that paper, though, he turned with a passion to his ''book about an experimental community'' (Skinner, 1979, p. 295)

Over the course of the next 40 years, Skinner became the most eminent psychologist of the 20th century (Haagbloom et al., 2002). He founded a science of operant behavior, that is, a science of behavior that was attributed to purpose: the experimental analysis of behavior (Skinner, 1938). In elaborating this science, he established a system of psychology that accounted for the mind without being mentalistic: behavior analysis (Skinner, 1953). In founding a science and establishing a system, he articulated a thoroughgoing naturalism that extended to every aspect of humanity, from mind to freedom and dignity: radical behaviorism (Skinner, 1945, 1955–1956).

Walden Two was Skinner's first extension of his science, system, and philosophy to issues of social justice and human well-being. Initially, it sold about 700 copies a year, twice as many as *The Behavior of Organisms* (Skinner, 1938), his first book on his science. At the time, though, *Walden Two*'s readers were not likely aware of his science. It was a young science. In the 1950s, his science was extended to basic research on human behavior: human operant behavior (see Lattal & Perone, 1999); in the 1960s, it was applied to solving societal problems: applied behavior analysis (see Cooper, Heron, & Heward, 2007); and in the 1970s, Skinner reengaged utopian themes (e.g., Skinner, 1967a, 1967b, 1968; see Rutherford, 2009, on this history). By then, *Walden Two* had become better integrated into the larger body of Skinner's science, system, and philosophy, and was selling 250,000 copies a year. To the end of his life, Skinner continued to address utopian themes and humanistic concerns, with *Walden Two* often as their context (e.g., Skinner, 1971c, 1972a, 1972b, 1973b, 1973c, 1977, 1986, 1987). In the process, the book became integral to both the eminence and notoriety he achieved as a public intellectual.

Our paper has two purposes. First, we review some of the historical, intellectual, and social context that lies behind *Walden Two*, context that is often missing in the treatments of Skinner's book. In particular, we situate it in the utopian genre rather than behavior analysis; review critiques of its premises and practices, some of them misunderstandings; and describe the fate of the intentional communities that were (and are) based on the book, and we offer some explanations. Our second, broader, purpose is to go beyond *Walden Two*. If the book has any value, this should be evident in practice, in particular, in what behavior-analytic practices followed the book's publication. Specifically, we should find *Walden Two*'s promise present today in practices that make a difference in the human condition, and we do.

BEHIND *WALDEN TWO*

The Utopian Genre

Author Intent

By the standards of author intent (Sargent, 1994), *Walden Two* is utopian in its content (Levitas, 1990; see Roemer, 1983, on its form, the guided tour). Skinner clearly attempted to

depict an achievable "good life" (Skinner, 1967b). In doing so, he pointed out five principles his book shared with Henry David Thoreau's (1854) *Walden*:

> (1) No way of life is inevitable. Examine your own closely. (2) If you do not like it, change it. (3) But do not try to change it through political action. Even if you succeed in gaining power, you will not likely be able to use it any more wisely than your predecessors. (4) Ask only to be left alone to solve your problems in your own way. (5) Simplify, your needs. Learn how to be happy with fewer possessions. (Skinner, 1979, p. 346)

Walden, however, was only a "Utopia for one" (Skinner, 1973c, p. 2). Social justice and human well-being require more than rugged individualism. They call for a science and technology of behavior. For Skinner (1976), the choice was clear:

> Either we do nothing and allow a miserable and probably catastrophic future to overtake us, or we use our knowledge about human behavior to create a social environment in which we shall live productive and creative lives and do so without jeopardizing the chances that those who follow us will be able to do the same. Something like a Walden Two would not be a bad start. (p. xvi)

Utopian Content

As for its content, *Walden Two* described practices that were of concern to Americans in the 1940s, both materially and emotionally. Among the former were practices that ensured good health and leisure time (e.g., labor-saving practices). Among the latter were practices to eliminate coercive and aversive control. According to Skinner, such control produced destructive emotional by-products, led to acrimonious social relations, and was ineffective in the long run in promoting social justice and well-being (Skinner, 1953, pp. 171–193). This remained his position on the use of aversive control for the rest of his life (see Skinner, 1973a, 1988, 1990).

Critiques of *Walden Two*'s Premises and Practices

Although utopian by today's standards, *Walden Two* was (and is) controversial to the point of being labeled dystopian because of its alleged premises and practices (e.g., Krutch, 1966). Its premises are criticized for dismissing purpose, mind, and freedom, without which social justice putatively has no foundation. Its practices purportedly involved behavioral engineering and mind manipulation (Matson, 1971). Critics also allege that the premises and practices were dictated by Skinner and his science. As one critic put it, Skinner's utopian vision could "change the nature of Western civilization more disastrously than the nuclear physicists and biochemists combined" (Jessup, 1948, p. 192). These criticisms, however, miss their mark. They equate Skinner's vision with essentialist premises and practices, whereas these were assumptions or discoveries that were then demonstrated to work, not a priori features of *the* behavior-analytic utopia.

Utopian Premises and Practices

Premises. As for Skinner's premises, they were no more than naturalism applied to human affairs. Naturalism is the working assumption that behavior is part of nature, and thus lawful and orderly in its own right, a function of historical and current environmental and biological contingencies and contexts. Naturalism is not controversial in science—it works. It is a useful premise. Skinner's extension of it to promote social justice and human well-being was a culmination of the Enlightenment philosophy that flowed forth from the Scientific Revolution.

As for purpose, mind, and freedom, Skinner never sought to dismiss them, only to naturalize them. In his view, human purpose was not a matter of a priori intelligent design, but a quality of behavior in context

selected for by its consequences. Mind was not a place or a thing of our own making, but actions and reactions, private and public, acquired in social context. Freedom was not free will, but rather having the requisite repertoires and opportunities for attaining valued outcomes. On these accounts, social justice and human well-being become a balance between (a) individual practices that enhance people's sense and capability of behaving purposefully, mindfully, and freely and (b) cultural practices that enhance a community's chances of survival. This is a dynamic balance between often conflicting interests, but it is not random or undetermined. Social justice and human well-being are in principle predictable and controllable, and are often so in practice, which *Walden Two* promises and, which we shall see, applied behavior analysis advances.

Skinner's (1971a, 1971b, 1972a, 1985b) naturalistic approach to purpose, mind, and freedom was never well received in American intellectual and popular culture. It is incompatible with a cultural ethos of individualism and freedom and with Counter-Enlightenment Romanticism. Naturalism has persisted in science, however, and is today extended to ethics, values, and the philosophy of science itself (e.g., Hocutt, 1977; Hull, 1988; Rouse, 2002; Zuriff, 1987). Extending it to social justice and human well-being might help us better understand, enhance, and promote them.

Practices. As for *Walden Two*'s practices, they have been criticized, as noted, for being dystopian exercises in behavioral engineering and mind manipulation dictated by Skinner and his science. As for *Walden Two*'s being engineered and manipulative, the critics are correct, but only in the context of *their* accounts of purpose, mind, and freedom. In Skinner's account, practices are not dystopian simply because they control behavior. Behavior is already controlled, some of it in a humanizing manner, some of it in a dehumanizing manner. Skinner sought to eradicate the latter—dehumanization through aversive control—by understanding it well enough through science to control it and then to replace it with humanizing forms of control through positive reinforcement that promoted social justice and human well-being. In this, Skinner reflected early 20th century America's social progressivism, seeking practices that would improve mental and physical health, the standards of work and daily living, and education and training. He believed in better living through science, as did, in general, the United States.

Walden Two's practices were not dictated by Skinner or his science (Roemer, 1983). They were practices conjectured to work by Skinner and then demonstrated to work by the community at that particular point in the community's development. They were community practices that met community needs, for example, using clear glass plates as opposed to opaque ones; climate-controlled air cribs as opposed to open cribs and playpens; group child-rearing practices as opposed to nuclear families; and self-control through positive and negative reinforcement as opposed to punishment. These were not dictated by Skinner's science or derived from any principle of behavior. Of course, some of *Walden Two*'s practices (e.g., efficiency) were those Skinner valued as a scientist and social progressive, but so too did the American culture in that era (Rutherford, 2003). Moreover, these practices would evolve (Skinner, 1985a; see Moylan, 1986, on critical utopian studies). *Walden Two* was not a blueprint for a behavior-analytic utopia.

Skinner (1948) made this point at least twice in his book through the character of T. E. Frazier. Early on, Frazier pointed out, "The actual achievement is beside the point. The main thing is, we encourage our people to view every habit and custom

with an eye to possible improvement. A constantly experimental attitude toward everything—that's all we need'' (p. 25). Later, Fraser commented, ''I've very much misrepresented the whole system if you suppose that any of the practices I've described are fixed. We try out many different techniques. Gradually, we work toward the best possible set'' (p. 106). What Skinner and his science offered was a means for searching for and discovering practices that maximized people's health, wealth, and wisdom. Skinner's utopian vision was not the practices he described in *Walden Two*, but the practices of how the community arrived at them—experimentally.

The Sustainability of Walden Two Communities

If Skinner's science has any value, this should be seen in its consequences, a presumably obvious one being the existence of intentional communities based on his book. In reality, though, few such communities exist, or they have changed so much that they neither longer accept Skinner's naturalistic premises nor engage in the practices he described (Altus, Kuhlmann, & Welsh, 1999; Kuhlmann, 2005; contra. Kuhlmann, see Altus, 2006; Morris, 2006). The largest and most famous of these is Twin Oaks (Kinkade, 1973, 1994). The only intentional community that continues to be based on Skinner's vision of experimentation is Comunidad Los Horcones (Comunidad Los Horcones, 1986). According to Juan Robinson-Bustamente, who grew up and continues to make his home there,

> shape a humanistic society based on cooperation, mutual help, nonviolence, and ecological sustainability. (Altus, 1999, p. 56)

To expect many Walden Two communities to exist is too stringent a test of the practices Skinner described. Practices that evolved in one place and time are not easily generalizable to others. Moreover, the sheer number and kinds of changes that would be required are enormous. For example, we would have to leave our nuclear families and relinquish child care to the community. We could bring almost no personal property with us and have to place our money under the community's control. We would give over many choices to the community (e.g., food, clothing). Although we would still lead purposeful lives, make personal decisions, and have many freedoms, especially freedom from aversive control, the extent of these changes would be difficult for many people to achieve. It is no wonder that Walden Two was not widely replicated or sustainable in Western culture.

These points notwithstanding, many of the practices Skinner described in *Walden Two* exist piecemeal in today's intentional communities (Rutherford, 2009), as well as in applied behavior analysis, where their purpose to improve social justice and human well-being is an indication of the value and a validation of *Walden Two*. To support this point further, we go beyond the book.

BEYOND *WALDEN TWO*

Having situated *Walden Two* in historical, intellectual, and cultural context and discussed Skinner's utopian premises and practices, we turn to three themes found in his novel that we use to organize the material to follow. These are drawn from a proverb attributed to Benjamin Franklin: ''Early to bed and early to rise, makes a man healthy, wealthy and wise'' (Franklin, 1735). Health, wealth, and wisdom were not values unique to Skinner, but are a central concern

It makes me feel sad that a living Walden Two community like Los Horcones is judged on what grandfather Skinner did or didn't write in the novel. From our point of view, the fact that a community is inspired by the novel does not make it a ''Walden Two.'' In our opinion, a Walden Two community is one in which the members are strongly committed to applying the science of behavior to design a new and better society. We consider Los Horcones a Walden Two community because we do this to

of the utopian literature, along with harmony, equality, and stewardship. Indeed, they are found throughout the history of utopian writings, state constitutions, and religious documents, as well as in contemporary intentional communities (e.g., Fellowship for Intentional Community, 2000).

What Skinner offered in *Walden Two* were conjectures about community practices that might be instrumental in attaining health, wealth, and wisdom. Although a detailed description of them might enlighten us about how Skinner thought a utopia could be achieved in his own time, a more compelling assessment of his contributions to solving problems of individual, social, and cultural importance may be found in the literature in applied behavior analysis (see Cooper et al., 2007; G. Martin & Pear, 2007; Miltenberger, 2007), a field inspired and informed by Skinner's science (Morris, Altus, & Smith, 2005). We organize these contributions under the three themes, broadly construed, first as Skinner described them in *Walden Two* and then as practices in applied behavior analysis that *Walden Two* foretold.

Health

Although *health* generally connotes only personal and medical practices for attaining and maintaining physical well-being, for Skinner (1948), it arguably encompassed a broader set of practices that included mental, community, and environmental health.

Physical Health

Walden Two. Skinner described a number of practices in *Walden Two* for keeping individuals and the community free from diseases and for promoting their physical well-being. These included minimizing crowds and isolating infants, as needed, to reduce the spread of infection; exposure to the outdoors to maintain the immune system; and insuring daily physical exercise and nutritious meals to ensure general health maintenance.

Applied behavior analysis. Contemporary practices in applied behavior analysis likewise address disease prevention and health promotion, as they should: Most chronic health problems are due to unhealthful behavior extended in time (i.e., lifestyles). These behaviors routinely bring us into contact with (or fail to prevent contact with) the causes of acute illnesses and diseases (e.g., bacteria, viruses) and contribute to chronic health problems (e.g., obesity, Type 2 diabetes, cardiovascular disease).

As early as the 1960s, applied behavior analysts began to develop interventions for problems such as addictions, chronic pain, and seizure and sleep disorders (Doleys, Meredith, & Ciminero, 1982). Since then, this and related work have evolved into the field of behavioral medicine and broadened their scope to include the prevention of heart disease and cancer (e.g., Blumenthal, Burg, & Roark, 1986; Cullen & Greenwald, 1986) and the promotion of healthful lifestyles (e.g., Taylor, 1986). Treatment strategies to reduce cancer risk include, for example, enhancing healthful behavior through public posting of goals, modeling, skill training, feedback, and incentives (e.g., raffles; e.g., Finney, Weist, & Friman, 1995; Lombard, Neubauer, Canfield, & Winnett, 1991). Biofeedback is another means for treating health problems, among them chronic headaches, hypertension, asthma, and diabetes (e.g., see *Applied Psychophysiology and Biofeedback*, 1976 to present). In biofeedback, patients are taught to control their physiological states (e.g., body temperature, heart rate, blood pressure) by providing continuous real-time feedback about those states and then information about healthful changes in them. For example, by providing feedback on muscle tension and hand temperature, patients with uncontrolled

insulin-dependent diabetes can be taught to relax as a means to stabilize their blood glucose levels (e.g., McGrady & Gerstenmaier, 1990).

Behavioral medicine has also become multidisciplinary, branching out to encompass still more varied populations and problems. Behavioral pediatrics, for example, designs methods for improving the health and well-being of children (e.g., Christophersen & Mortweet, 2001; see the 1993 special section on behavioral pediatrics in the *Journal of Applied Behavior Analysis* [*JABA*], pp. 421–504). Behavioral pharmacology researches methods for preventing and treating addictions (e.g., Higgins, Silverman, & Heil, 2008; see the 2008 special issue of *JABA*, pp. 471–651). Behavioral gerontology is exploring ways to improve the health and well-being of elders (e.g., Burgio & Burgio, 1986; Carstensen, 1988; Skinner & Vaughn, 1983), for instance, by engaging them in nursing home activities (e.g., Altus, Englemann, & Mathews, 2002; Englemann, Altus, & Mathews, 1999). And, behavioral safety works to improve personal and workplace safety (see www.behavior.org, the 1988 special section on behavior analysis and safety in *JABA*, pp. 233–280, and the 1991 special section on road safety in *JABA*, pp. 13–94).

In each of these areas, a variety of strategies is used to improve outcomes. These typically involve redesigning environmental conditions so that behavioral antecedents and consequences can gradually shape desired outcomes. Among the more notable successes have been the use of prompts, skill training, and reinforcement. One well-known example is an alarm that signals urination to produce rapid toilet training and treat enuresis (Azrin & Foxx, 1971; Friman & Vollmer, 1995). Similarly, habit reversal, which includes relaxation training, awareness training, competing-response training, and parental social support, has been used to reduce vocal and motor tics, hair pulling, and other problem behaviors in children (e.g., Azrin & Peterson, 1990; Rapp, Miltenberger, Long, Elliott, & Lumley, 1998). Other reinforcement strategies are used to promote compliance with pediatric medical procedures (e.g., regimen compliance; preparation for body scans; e.g., Slifer, Koontz, & Cataldo, 2002).

Mental Health

Walden Two. Mental health was fostered in Walden Two by providing meaningful work that used its members' individual strengths; ensuring sufficient leisure time to pursue valued hobbies and interests; staggering work schedules to reduce stress; and providing sufficient opportunities for both group activities and privacy.

Applied behavior analysis. Some of the earliest work in applied behavior analysis focused on mental health issues, for example, reducing aberrant behaviors of persons with severe and persistent mental illness (e.g., Ayllon & Azrin, 1968; Ayllon & Michael, 1959), work that has continued to the present but with a greater emphasis now on skills building (Bellack & Hersen, 1993). The conduct of one-on-one clinical therapy in this mode is now typically referred to as clinical behavior analysis, both in working with persons with chronic mental illness and in improving the mental health of verbally competent adults who seek assistance in outpatient settings (e.g., Dougher, 1999; Hayes, Strosahl, & Wilson, 1999; see the special sections of *The Behavior Analyst*, 1993, 1994, 2009; and the 2006 special section of *JABA*, pp. 407–474).

Behavior therapy is known for a number of widely used, empirically supported procedures that help people lead more successful lives. Systematic desensitization, for instance, has been used for decades to help people with phobias and other anxiety disorders (Wolpe, 1958; see also

Emmelkamp, 1990). Relatedly, covert conditioning has been used extensively to treat problems such as obsessive-compulsive behavior, headaches, pain, asthma, and depression (Cautela & Kearney, 1993). For example, pairing relaxation and reinforcement with guided covert imagery and the eventual presentation of a feared stimulus can eliminate severe childhood phobias (e.g., Cautela, 1993). Among the other procedures are (a) assertiveness training to help people gain confident and self-assured behavior (e.g., Watson & Tharp, 2002); (b) relaxation training to alleviate stress (e.g., Cautela & Groden, 1978); (c) in vivo exposure and response prevention to reduce obsessive-compulsive behaviors (e.g., Steketee & Shapiro, 1993); (d) communication and problem-solving techniques to improve marital relationships (e.g., Jacobsen & Christensen, 1996); and (e) self-management techniques to teach individuals to work independently on desired behavior change (e.g., Logue, 1995).

Community Health

Walden Two. Defined in terms of harmony and cooperation, community health was promoted in *Walden Two* by such practices as distributing the community's resources equally; removing honorific titles; requiring that everyone participate in unskilled labor; rearing children communally; eating and working together; and compensating all forms of work, including work that was unpaid (e.g., housework, child care).

Applied behavior analysis. In the mid-1970s, applied behavior analysis began to expand into work at the community level (see Briscoe, Hoffman, & Bailey, 1975) by, for example, developing community reinforcement approaches to the treatment of alcoholism that helped participants build rich networks of social connections and establish a culture of positive exchange (e.g., Hunt & Azrin, 1973; see Mattaini, 1996). The field of behavioral community psychology today focuses on the prevention and alleviation of problems at the community level by involving community members in the selection of goals and in the design, implementation, and evaluation of treatment strategies (see the 1991 special issue on behavioral community intervention in *JABA*, pp. 617–693). Among these problems are the illegal sale of cigarettes to minors, which can be reduced by systematically monitoring merchants and levying penalties (Jason, Billows, Schnopp-Wyatt, & King, 1996) and the use of safety restraints in cars, which can be increased through procedures such as prompts (e.g., reminders, signs), skill training (e.g., training in car seat installation), and incentives (e.g., free child car seats; e.g., Engerman, Austin, & Bailey, 1997; Gras, Cunill, Planes, Sullman, & Oliveras, 2003; Lavelle, Hovell, West, & Wahlgren, 1992).

Within social groups, applied behavior analysis has been used to promote harmonious relations in living arrangements by establishing work-sharing systems in which residents earn points exchangeable for a reduction in rent for completing housework (e.g., Miller & Feallock, 1975). Similarly, researchers have worked to increase cooperative interactions among students in educational settings by using procedures such as peer mentoring and team activities in cooperative learning groups (e.g., Dugan et al., 1995) and cooperative games to increase harmonious interactions among children (e.g., Bay-Hinitz, Peterson, & Quilitch, 1994).

Environmental Health

Walden Two. Although not commonly addressed in the 1940s, environmental health was dealt with in *Walden Two* by practices that are now more routine. Skinner (1948) described practices for promoting sustainable agriculture (e.g., main-

taining healthy pastures through rotational grazing); reducing the use of scarce resources (e.g., building energy-efficient dwellings; using animals, rather than machines, to control grass; sharing living quarters and eating together; staggering schedules; engineering efficient domestic practices); recycling (e.g., feeding leftovers to the pigs); reducing waste (e.g., changing clothing styles slowly to avoid fads); and monitoring water quality (e.g., balancing pH levels).

Applied behavior analysis. The field of behavioral ecology emerged in the 1980s to address such issues (Lloyd, 1980). Since then, applied behavior analysts have been involved in efforts to increase energy conservation, recycling, litter control, and carpooling (e.g., Geller, 1986; Geller, Winett, & Everett, 1982). Indeed, a 10-year-old boy published a study on increasing recycling (J. J. Keller, 1991), suggesting that not all behavior-analytic methods require sophisticated knowledge of the science. As with other applied behavior-analytic methods, the field of behavioral ecology typically arranges or rearranges behavioral antecedents and consequences, for instance, placing trash receptacles in central locations, offering cash prizes and public recognition to increase recycling and proper disposal of trash (e.g., Bacon-Prue, Blount, Pickering, & Drabman, 1980; Ludwig, Gray, & Rowell, 1998), and, in the Netherlands, providing information on energy conservation, prompts and feedback, both individual and collective, to promote long-term energy-saving practices in large office buildings (Staats, van Leeuwen, & Wit, 2000; see also Winett, Leckliter, Chinn, Stahl, & Love, 1985).

In addressing means for changing environmentally harmful practices, some applied behavior analysts have examined not only individual and corporate practices but also cultural practices that may have catastrophic consequences, for instance, those associated with Western patterns of consumption (Biglan, 1995). Among these practices are lifestyle patterns that lead to excessive energy consumption. One means of addressing this is to create networks of social contingencies that richly reinforce discussing the problem and its possible solutions. People may be more approving of practices such as increased gasoline taxes if they discuss the merits of those practices with friends and neighbors at the grassroots level, thereby creating a supportive social environment.

Wealth

Walden Two

Although *wealth* may connote an antiutopian theme, it does not in *Walden Two*. Skinner was concerned with practices that ensured freedom from poverty across the community and the equal distribution of resources within it. Every member, for example, was required to contribute work of the community, thereby creating a labor pool sufficient to meet the community's needs. Resources were also used judiciously to assure adequate community capital, goods, and services from cradle to grave for current and future generations. Finally, wealth was distributed equitably; no member benefited at the expense of another.

Applied Behavior Analysis

Some of the earliest work in applied behavior analysis focused on issues of social justice regarding wealth and continues today in work to empower persons who are disenfranchised. Indeed, a special interest group of the Association for Behavior Analysis International —a group known now as Behaviorists for Social Responsibility—has addressed such issues as they relate to political philosophy, policy, and ethics, most formally in the journal, *Behavior and Social Issues*. Applied behavior ana-

lysts have also addressed these issues empirically. They have, for instance, improved the lives of welfare recipients by promoting attendance at self-help meetings through the use of practical forms of reinforcement such as donated clothing and household goods (e.g., Miller & Miller, 1970). Others have helped groups of low-income adults, assisting them in their problem-solving and decision-making strategies (e.g., Briscoe et al., 1975) and designing a behavioral program of education and skill training for adults and children living in substandard conditions in an Honduran barrio of 30,000 persons (Cohen, 1994). They have worked with children in Head Start programs, teaching preacademic skills to insure their success in public schools (e.g., Miller & Schneider, 1970). Other research has validated the effectiveness of job-finding clubs to help unemployed people, particularly those in disenfranchised populations, find jobs through the use of buddy systems, role-playing, and family support (e.g., Azrin, Flores, & Kaplan, 1975). Even when low-income jobs are obtained, they often present hazards that applied behavior analysts have sought to redress by using, for instance, systematic instructions, feedback, and consequences to increase, for instance, the proper packaging of trash by city residents, thereby improving the job conditions of garbage collectors (e.g., Stokes & Fawcett, 1977).

Returning to health-related themes, research has demonstrated how to use prompts, incentives, and problem-solving procedures to increase low-income families' use of dental services (e.g., Reiss & Bailey, 1982). Many applied behavior analysts have also worked to prevent such important social ills as sexual abuse, abduction, and child abuse and neglect through procedures that include behavioral skills training and feedback (e.g., Greene, Norman, Searle, Daniels, & Lubeck, 1995; Miltenberger et al., 1999; Miltenberger & Thiesse-Duffy, 1988; Tertinger, Greene, & Lutzker, 1984), as well as ecobehavioral approaches that stress the importance of variables within the family and local community (e.g., socioeconomic status, family stressors; see Lutzker & Campbell, 1994). More recently, behavioral approaches to parent training have been used to prevent abuse and promote the well-being of foster children (e.g., Van Camp, Borrero, & Vollmer, 2003).

In addition to their work with children in Head Start, applied behavior analysts have also addressed social justice through educational interventions designed to improve the academic achievement of disadvantaged students in inner-city schools which, in turn, improves their ability to compete in the job market (e.g., Gardner, Heward, & Grossi, 1994). Perhaps the best known evaluation of these interventions was in the Follow Through programs to help disadvantaged children maintain their gains in Head Start. A nationwide evaluation demonstrated the superiority of behavioral programs; however, they were never broadly adopted (see Watkins, 1988, 1997). The culture prefers cognitivist and humanistic educational practices over humane and effective ones, even though they may hinder income equity in the long run.

In summary, although behavior analysis has not been extensively applied to issues directly related to wealth and poverty, its applications in health and wisdom have a significant financial impact. They lower health costs and its insurance and decrease the financial burden of remedial and special education. In addition, they increase workforce productivity and income, and thereby the quality of life, both for individuals and society.

Wisdom

Walden Two

Walden Two is fundamentally about wisdom—wisdom that is the process

and product of science, that is, knowledge. The community engages in educational practices that ensure freedom from ignorance. Free and equal education is available to every member, not only in the basic academic skills necessary for community survival but also in personal skills needed for individual and community harmony (e.g., self-control, overcoming destructive emotions). The community, however, engages in practices more far-reaching than educating its individual members. It is ultimately concerned with searching for and discovering knowledge that benefits the community as a whole. This sense of wisdom is perhaps *Walden Two*'s most central theme: the use of science, both descriptive and experimental, to inform and guide practices that ensure the support of its members and the community's effectiveness, and thus ultimately its survival.

Applied Behavior Analysis

Just as in *Walden Two*, knowledge that begets wisdom has been a primary focus of applied behavior analysis. Skinner (1954) was actively involved in education through the invention and promotion of teaching machines and programmed instruction (Morris, 2003). Although teaching machines enjoyed widespread use for only a few years, programmed instruction has been used extensively in schools as well as in business, industry, and the armed forces. It involves presenting carefully sequenced written material broken into "frames," each requiring active responding (e.g., filling in a blank), and providing immediate feedback on accuracy (e.g., Holland & Skinner, 1961). Numerous studies have demonstrated its effectiveness in teaching a variety of subject matters to populations ranging from children with intellectual disabilities to college students (e.g., Crosbie & Kelly, 1994; Kritch & Bostow, 1998).

Skinner's work also inspired the development of the personalized system of instruction (PSI), which allows students to move at their own pace through courses that are broken into curricular units that have to be mastered before moving on to new material (F. S. Keller, 1968; see also interteaching, Boyce & Hineline, 2002). This system has been used in schools and universities nationally and internationally for decades with much success and is currently being integrated with computer technology to increase its usefulness (e.g., Crosbie & Glenn, 1993; T. L. Martin, Pear, & Martin, 2002). Skinner's influence on education is also shown in the development of entire schools based on behavior analysis (see, e.g., Johnson & Street, 2004; Twyman, 1998). Finally, now that colleges and universities are becoming more interested in the scholarship of teaching, and thus with teaching outcomes defined in terms of student learning, they are promoting behavior-analytic teaching practices (e.g., PSI), albeit unwittingly.

Applied behavior analysis has proven to be effective not only in education but also in training, especially work-related training. The aforementioned field of behavioral safety, for example, evaluates and promotes changes in employee and supervisor practices to increase safety in the workplace. Systematic performance feedback, in particular, has proven to be useful in these regards (e.g., Alavosius & Sulzer-Azaroff, 1990; Babcock, Sulzer-Azaroff, Sanderson, & Scibek, 1992), for example, in increasing the compliance of nurses in wearing gloves when working with patients with AIDS (DeVries, Burnette, & Redirion, 1991).

In addition to making improvements in education and training, applied behavior analysts have focused extraordinary effort in teaching and training persons who are disenfranchised by autism and other developmental disabilities, physical disabilities, and mental illness. The most

well-known example is the application of behavior analysis to autism, which is today's best empirically based treatment for the disorder (see Harris & Weiss, 2007; Maurice, Green, & Luce, 1996). An important example of this is the widespread application and national and international dissemination of the Teaching Family Model (Braukmann & Wolf, 1987; Wolf, 1997; see Powell, Fixsen, Dunlap, Smith, & Fox, 2007). This model was originally designed to create therapeutic living environments for adjudicated youth so that they could acquire the education and training that would help them lead productive lives outside the judicial system. More recently, the Teaching Family Model has been adapted for persons with developmental disabilities. Once held in large institutions as largely uneducable, they have been successfully integrated into community life using this model. It promotes the use of small group homes, led by live-in teaching parents, and managed through behavior-analytic procedures to reduce behavioral excesses (e.g., aggression, self-injury), overcome behavioral deficits (e.g., personal care, communication), and teach vocational skills (e.g., Bailey, Neef, Wacker, Repp, & Shook, 1997; Ghezzi, Williams, & Carr, 1999). Although behavior analysis has been accused of taking away individual freedom, it does the opposite. It increases freedom and autonomy by enlarging personal, social, and vocational repertoires, thereby increasing the individual's access to and choice among valued activities and the ability to have a more meaningful, self-directed life (see Bailey et al.), especially one that is satisfying (e.g., Green, Gardner, & Reid, 1997).

Summary

Applied behavior analysis has been demonstrably effective in promoting the health, wealth, and wisdom of individuals and groups for the past 50 years. It holds equal promise for changing cultural practices in the future, for instance, those related to racism, sexism, child and sexual abuse, violence, homelessness, and hopelessness (Biglan, 1995; Lamal, 1997; Mattaini & Thyer, 1996). Its application to these problems, however, remains underdeveloped. Many profound social problems have yet to receive what their importance warrants (Hawkins, Greene, & Fuqua, 1995).

CONCLUSION

Our paper had two purposes. The first was to introduce the historical, intellectual, and social context that lay behind *Walden Two* and its cultural practices. The second was to assess the book's ultimate value by reviewing practices in behavior analysis that followed from it.

As for our first purpose, we found *Walden Two* situated in the utopian genre that addresses means for maximizing social justice and human well-being by balancing (a) the community members' ability to achieve these ends purposefully, consciously, and freely with (b) the community's ability to do the same, so as to ensure its survival. In *Walden Two*, the community's practices were those Skinner conjectured would benefit both interests. They were, though, contingent. They were contingent on Skinner's historically situated personal and scientific values and the cultural context of post-World War II America. They were contingent on the community's evolution in the context of changes in the American culture. And, they were contingent on the community's self-experimentation, that is, on its systematically searching for and discovering practices that maximized individual and community health, wealth, and wisdom (see Skinner, 1985a). Skinner's utopian vision, then, was not about any of *Walden Two*'s practices, except one: experimentation. His vision

was to search for and discover practices that maximized social justice and human well-being. This was Skinner's unique contribution to the utopian genre; it distinguishes *Walden Two* from all the others. As he later exhorted, "Regard no practice as immutable. Change and be ready to change again. Accept no eternal verity. Experiment" (Skinner, 1979, p. 346).

As for our second purpose, we found that Skinner was prescient. In *Walden Two*, he described a myriad of practices for solving problems of individual, social, and cultural importance, many of them broad in scale, for instance, those in economics, education, environmental sustainability, and personal lifestyles. The promise of their solution was found in the application of behavior analysis to promote individual and community health, wealth, and wisdom. This was due, in part, to Skinner's advocacy for applications of his science to improve the human condition (see Morris et al., 2005), as well as what would be expected of any natural science: its application. Applied behavior analysis is a measure of the success of Skinner's (1948) utopian vision in *Walden Two*: to experiment.

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